

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 15-23, 26, and 38-30 are pending. As no claims are currently amended or added, no new matter is added.

In the outstanding Office Action, Claims 15-23, 26, and 28-30 are rejected under 35 U.S.C. § 102(b) as anticipated by Ungar (U.S. Patent No. 2,462,924).

In response to the rejection under 35 U.S.C. § 102(b), Applicants respectfully request reconsideration of this rejection and traverse this rejection, as discussed below.

Independent Claim 19 recites:

An external gear pump, comprising:

at least one pair of mutually meshed toothed gears including a driving gear and a driven gear, each tooth of the gears being comprised of a root including two concave root sectors, with each of the concave root sectors being joined at an origin to a concave root sector of a neighboring tooth, and a top including a first side and a second side, with each of the sides of the top joined to a respective one of the concave root sectors by a first transition point,

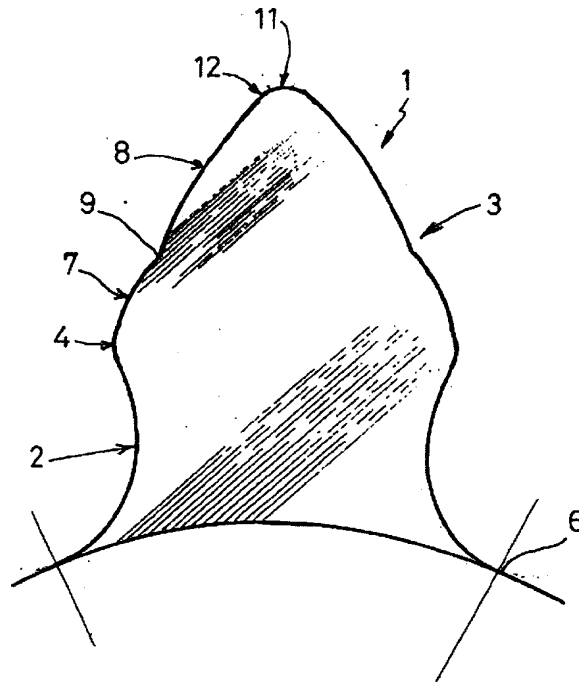
wherein each of the sides of the top includes two convex sectors joined by a second transition point defining a discontinuity in curvature of a profile of the tooth,

wherein the teeth in mesh have at all times at least one primary bearing point by which the driving gear moves the driven gear, and at least one secondary contact point, and

wherein the first transition point of one of the teeth in mesh is successively the primary bearing point and the secondary contact point in the course of meshing.

Accordingly, the external gear pump recited in Claim 19 includes at least one pair of mutually meshed toothed gears. Each tooth of the gears comprises a root and a top. The root includes two concave root sectors and the top includes a first side and a second side each being joined to one of the concave root sectors. Further, each of the sides of the top includes

two convex sectors. Exemplary embodiments of these two convex sectors can be seen as reference characters 7 and 8 in Figure 1 (reproduced below).



These two convex sectors 7, 8 are joined by a second transition point, identified as reference character 9, that defines a discontinuity in curvature of the profiled tooth. Accordingly, as can be seen in Figure 1, the two convex sectors 7, 8 do not form a continuous curve, but instead meet at the second transition point 9 where the curve is discontinuous.

It is respectfully submitted that the cited reference does not disclose or suggest every feature recited in independent Claim 19.

The Office Action relies on Ungar to reject Claim 19. Specifically, the Office Action equates two adjacent portions c and d which are convex curves in the involute portions e and f to the claimed two convex sectors on each of the sides of the top. Additionally, the Office Action notes to “see Figures 1-4” in rejecting the claimed second transition point that defines discontinuity in curvature of a profiled tooth.

However, as can be seen in Figures 1 and 4, ***there is no discontinuity*** between convex curve d and involute portion f or between convex curve c and involute portion e. On the

contrary, the top of the tooth of Ungar has a profile of continuous curvature. Accordingly, Ungar fails to disclose or suggest the claimed second transition point between the two convex sectors that defines discontinuity in curvature of a profiled tooth.

Additionally, as explained in Ungar from column 2, line 13 to column 3, line 13, the tooth profile described therein has a top that is completely rounded. Further, Ungar describes that the three specific features that allow it to overcome the difficulties and limitations to satisfactory volumetrical performance are due to this tooth profile. Accordingly, if this tooth profile of Ungar were changed to include the claimed discontinuous second transition point, the gear tooth of Ungar would not be satisfactory for its intended purpose.

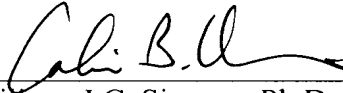
Thus, Applicants respectfully submit that Ungar does not disclose or suggest every feature recited in independent Claim 19. Therefore, it is respectfully requested that the rejection of Claim 19, and all claims dependent thereon, as anticipated by Ungar be withdrawn.

Consequently, in view of the above discussion, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below-listed telephone number.

Respectfully submitted,

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